

Preliminary research suggests improving and maintaining heart health after pregnancy may reduce the risk of CVD

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Women with a history of adverse pregnancy complications are at significantly higher risk of developing heart disease but can reduce their risk by maintaining optimal heart health after pregnancy, according to preliminary research presented at the American Heart Association's [Epidemiology and Prevention | Lifestyle and Cardiometabolic Scientific Sessions 2024](#), held March 18–21, in Chicago.

"Previous studies have shown that women with a history of adverse pregnancy outcomes tend to have a higher risk of developing cardiovascular disease later in life," said lead study author Frank Qian, M.D., M.P.H., a cardiovascular medicine fellow at Boston Medical Center and clinical instructor at the Boston University Chobanian & Avedisian School of Medicine.

"However, it is unknown how much of this increased cardiovascular disease risk can be potentially modified by healthy lifestyle behaviors."

Adverse pregnancy outcomes examined in this study included placental abruption, gestational diabetes, small size for gestational age, pre-term birth and/or hypertensive disorders of pregnancy, defined as preeclampsia or gestational hypertension. Additionally, according to the Association's 2021 statement on [Adverse Pregnancy Outcomes and Cardiovascular Disease Risk](#), many adverse pregnancy outcomes are associated with the future development of CVD risk factors, including hypertension, type 2 diabetes and dyslipidemia.

In this study, researchers reviewed data from the UK Biobank to evaluate the association between [Life's Essential 8](#) scores and the development of cardiovascular disease in women with and without a history of adverse pregnancy outcomes.

Life's Essential 8 are key measures defined by the American Heart Association for improving and maintaining optimal cardiovascular health, including healthy diet, physical activity, smoking cessation, healthy sleep habits and managing weight, cholesterol, blood sugar and blood pressure. Cardiovascular health scores range from 0–100, with higher scores indicating better cardiovascular health.

The analysis found significant interactions among adverse pregnancy outcomes, cardiovascular health scores and cardiovascular events during the 13.5-year follow-up period:

- Women who had better cardiovascular health measures after pregnancy, or Life's Essential 8 scores of 76 or higher, had a 57% lower risk of developing cardiovascular disease compared to women with scores of 67 and below.
- Women who had complications during pregnancy and poor cardiovascular health scores after pregnancy had a 148% increase in the risk of developing cardiovascular disease.
- Among women with a history of pregnancy complications, those who achieved or maintained high heart health after pregnancy were at a similar risk for heart disease as women without adverse pregnancy outcomes and good cardiovascular health.
- Women with intermediate and low Life's Essential 8 scores (scores of 68.2 to 77.5 and below 68.1, respectively) had an elevated risk for heart disease—25% and 81%, respectively—whether or not they had a prior history of adverse pregnancy outcomes.

"We were most surprised to find that women who had a history of pregnancy complications and were able to achieve and maintain a high level of cardiovascular health after pregnancy significantly reduced their risk of future cardiovascular disease. They essentially had an equivalent CVD risk to women without no history of adverse pregnancy outcomes

who also had high cardiovascular health," Qian said.

"These findings are important for [clinical practice](#) as well as designing public health interventions and policies. We need to identify high-risk women and focus on ensuring they have access to lifestyle or treatment to reduce their long-term risk of cardiovascular disease."

Study background and details:

- The UK Biobank is a large biomedical database and research resource with health records of about 500,000 adults—enrolled from 2006 until 2010—who live in the U.K and received health care through the U.K.'s National Health Service. The researchers accessed the data in April 2023.
- The study included 2,263 women with a prior diagnosis of adverse pregnancy outcomes and 107,260 women who had no history of complications during pregnancy. None of the participants had cardiovascular disease at the beginning of the study.
- Mean age of participants at the time of enrollment was 50.2 years among women with a history of adverse pregnancy outcomes and 56.6 years among women without a history of adverse pregnancy outcomes.
- Over the average 13.5 years of follow-up, 197 cardiovascular disease events were documented in women with a history of adverse pregnancy outcomes.
- 95.2% of the participants self-identified as white; 4.8% self-identified as other race, which the researcher combined as one group to meet analytical thresholds. Cardiovascular outcomes were not statistically different between the two groups, Qian said.
- The proportion of women who had an adverse pregnancy outcome and self-identified as non-white was 8.2%, compared to 4.8% of the participants who had no history of an adverse

pregnancy outcome.

The study's limitations included that it is an observational analysis, meaning the findings do not confirm cause and effect, and that more than 94% of the study population from the UK Biobank self-identified as white race, meaning the findings may not be generalizable to people of other races or ethnicities.

"Our study did not include enough women from other diverse races or ethnicities to have to be able to understand how cardiovascular health metrics after an adverse pregnancy outcome may influence long-term CVD risk," Qian said.

"That being said, we observed a trend towards lower risk for cardiovascular disease in women who maintained better cardiovascular health after pregnancy, so these improvements in cardiovascular health should also be beneficial to women of other races and ethnicities, though more research is needed to confirm this hypothesis."

Nieca Goldberg, M.D., a clinical associate professor of medicine at NYU Grossman School of Medicine, medical director of Atria NY and an American Heart Association volunteer expert who was not involved in the study, said, "This is an important study because it indicates a role for prevention to lower heart disease risk in women who have pregnancy related disorders of preeclampsia, pre-term birth and gestational diabetes.

"When applying Life's Essential 8 risk scores, those women with the lowest scores were at higher risk for [cardiovascular disease](#). We need to encourage health care professionals to integrate Life's Essential 8 into clinical practice to improve heart health in women with and without [pregnancy](#)-related disorders. In addition, we need additional research to evaluate the benefits of Life's Essential 8 in diverse populations of

[women.](#)"

Provided by American Heart Association

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